



Name: _____ Period: _____

SM2H 3.6 Solving Quadratic Equations by Using the Square Root Principle

Simplify. Write your answers in simplest radical form.

1. $\sqrt{50}$

2. $13\sqrt{8}$

3. $\sqrt{-45}$

4. $\sqrt{-72}$

Find all solutions (real and imaginary) to each equation by taking square roots. Write all answers in simplest radical form and write complex answers in the form $a + bi$.

5. $a^2 = 4$

6. $b^2 = 24$

7. $c^2 = -49$

8. $4d^2 = 36$

9. $h^2 + 7 = -4$

10. $6k^2 - 3 = -15$

11. $(m + 4)^2 = 100$

12. $m^2 + 4 = 100$

$$13. 2(p+3)^2 = 8$$

$$14. 9(r+2)^2 = 180$$

$$15. 6(t-4)^2 = -72$$

$$16. 2(v-2)^2 + 4 = 100$$

$$17. 3(w-1)^2 - 6 = -33$$

$$18. -9\left(z + \frac{1}{3}\right)^2 = 4$$

$$19. 0 = 3x^2 - 54$$

$$20. -25 = \frac{1}{4}x^2$$

$$21. \left(y + \frac{1}{6}\right)^2 = 12$$

$$22. 2(x-4)^2 = 0$$

$$23. 3(x+2)^2 = 6$$

$$24. 5(x-8)^2 = 0$$

$$25. 4(x+9)^2 - 72 = 0$$

$$26. 0 = -2(x+3)^2 - 8$$

$$27. -\frac{2}{5}(x-8)^2 + 40 = 0$$

$$28. 0 = \frac{1}{2}(x-3)^2 - 18$$

29. Explain why you must use the “ \pm ” sign when solving an equation by taking square roots.

